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† ADMITTED ONLY IN CALIFORNIA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

James E. Moon, et al.

Serial No.:

09/702,955

Filed:

October 31, 2000

For:

INTEGRATED MONOLITHIC
MICROFABRICATED ELECTROSPRAY
AND LIQUID CHROMATOGRAPHY
SYSTEM AND METHOD

Art Unit
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TRANSMITTAL FOR
SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Transmitted herewith for filing and pursuant to 37 C.F.R. § 1.97 is a Supplemental Information Disclosure Statement.

Enclosed also are the following designated documents, as required under 37 C.F.R. §§ 1.97 and 1.98:

- ☒ Form PTO-1449 list of one hundred twenty-seven (127) references submitted for consideration.
- ☐ Legible copies of the listed references or their relevant portions.
- ☐ All English translations of each nonenglish reference, if any, within the possession, custody, control or availability of anyone designated in 37 C.F.R. § 1.56(c) (see 37 C.F.R. § 1.98(c)).

The following are included within the Supplemental Information Disclosure Statement if applicable and as required under 37 C.F.R. § 1.98:

- ☒ Concise explanation of relevance of each reference not in English and unaccompanied by an English translation.
- ☒ Statement that certain listed references not enclosed are substantially cumulative of an enclosed reference.
- ☒ Statement that certain listed references not enclosed were previously cited by or submitted to the Office in the identified prior application which is relied upon for an earlier filing date under 35 U.S.C. § 120.

In order to secure consideration of the items designated above, one or more of the following, if required, is also enclosed:

- ☐ Promptness Certification.
- ☐ Credit Card Payment Form PTO-2038 authorizing the amount of \$180 constituting the submission fee under 37 C.F.R. 1.17(p) for the Information Disclosure Statement;
- ☐ Petition for Consideration and Check No. _____ in the amount of \$_____.
- ☐ In the event that 37 C.F.R. § 1.97(c) applies and the Examiner is not satisfied that the Promptness Certification meets the requirements of 37 C.F.R. § 1.97(e), or in any other event remediable by a fee, please credit any over payment or charge any additional fees to Deposit Account No. 23-3178 of the undersigned.

Dated this 28th day of February, 2002.

Respectfully submitted,



David O. Seeley
Attorney for Applicants
Registration No. 30,148





PATENT APPLICATION

Docket No: 14917.1.4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

James E. Moon, et al.

Serial No.: 09/702,955

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SYSTEM AND METHOD

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CERTIFICATE OF DEPOSIT UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on February 28, 2002.

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SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. § 1.97

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Please find, pursuant to 37 C.F.R. § 1.98(a)(1), the enclosed Form PTO-1449 which contains a list of all patents, publications, or other items that have come to the attention of one or more of the individuals designated in 37 C.F.R. § 1.56(c). While no representation is made that any of these references may be "prior art" within the meaning of that term under 35 U.S.C. §§ 102 or 103, the enclosed list of references is disclosed so as to fully comply with the duty of disclosure set forth in 37 C.F.R. § 1.56.

Moreover, while no representation is made that a specific search of office files or patent office records has been conducted or that no better art exists, the undersigned attorney of record believes that the enclosed art is the closest to the claimed invention (taken in its entirety) of which

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the undersigned is presently aware, and no art which is closer to the claimed invention (taken in its entirety) has been knowingly withheld.

In accordance with 37 C.F.R. §§ 1.97 and 1.98, a copy of each of the listed references or relevant portion thereof is also enclosed.

In accordance with 37 C.F.R. § 1.98(c), all English translations within the possession, custody, control or availability of anyone designated in 37 C.F.R. § 1.56(c) of each nonenglish reference, if any, are also enclosed.

Statement of Relevance of References Listed
Unaccompanied by English Translation
Under 37 C.F.R. § 1.98(a)(3)

In accordance with 37 C.F.R. § 1.98(a)(3), the following concise explanation of the relevance of each listed reference that is not in the English language and unaccompanied by a translation into English is provided.

DE 43 18 407: This German patent was cited in United States Patent No. 6,245,227. Applicant does not have in its possession an English translation. However, Applicant has attached an English abstract of this German patent and is enclosed herewith.

Statement of Cumulative References
Under 37 C.F.R. § 1.98(c)

The references listed in the following United States patent applications are not enclosed because, under 37 C.F.R. § 1.98(c), they are continuation applications of United States Patent No. 6,245,227, and hence have the identical specification:

United States Serial No. 09/970,714, filed October 5, 2001

United States Serial No. 09/970,715, filed October 5, 2001

United States Serial No. 09/970,716, filed October 5, 2001

United States Serial No. 09/970,717, filed October 5, 2001

United States Serial No. 09/970,718, filed October 5, 2001

United States Serial No. 09/970,824, filed October 5, 2001

Statement of References Previously Disclosed
Under 37 C.F.R. § 1.98(d)

The following listed references are not enclosed because, under 37 C.F.R. § 1.98(d), they were previously cited by or submitted to the Office in application number 09/156,507, filed September 17, 1998, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

U.S. Patent Documents

<u>Patent Number</u>	<u>Issue Date</u>	<u>Name</u>	<u>Sub Class</u>	<u>Class</u>	<u>Filing Date</u>
3,538,744	11/10/760	Karasek	73	23.1	11/09/67
3,738,759	6/12/73	Dittrich, et al.	356	208	4/16/70
3,915,652	10/28/75	Natelson	23	259	12/16/74
4,056,324	11/1/77	Göhde	356	246	5/5/76
4,356,722	11/2/82	Bunce, et al.	73	53	11/5/80
4,366,118	12/28/82	Bunce, et al.	422	57	6/13/79
4,369,664	1/25/83	Bunce, et al.	73	864.12	10/24/80
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4,593,728	6/10/86	Whitehead, et al.	141	98	11/14/83
4,708,782	11/24/87	Andresen, et al.	204	299	9/15/86
4,879,097	11/7/89	Whitehead, et al.	422	67	4/4/86
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4,908,112	3/13/90	Pace	204	299	6/16/88
4,983,038	1/8/91	Ohki, et al.	356	246	4/7/88
4,999,493	3/12/91	Allen, et al.	250	288	4/24/90
5,015,845	5/14/91	Allen, et al.	250	288	6/1/90
5,110,745	5/5/92	Kricka, et al.	436	87	6/1/89
5,126,022	6/30/92	Soane, et al.	204	180.1	2/28/90
5,132,012	7/21/92	Miura, et al.	210	198.2	6/22/89
5,180,480	1/19/93	Manz	204	299	1/13/92
5,245,185	9/14/93	Busch, et al.	250	288	11/5/91
5,269,900	12/14/93	Jorgenson, et al.	204	299	9/13/90
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5,296,375	3/22/94	Kricka, et al.	435	291	5/1/92
5,302,533	4/12/94	Kricka	436	537	4/10/92
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5,331,159	7/19/94	Apffel, Jr., et al.	250	288	1/22/93
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5,338,427	8/16/94	Shartle, et al.	204	299	2/26/93
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5,374,834	12/20/94	Geis, et al.	257	239	10/12/93
5,376,252	12/27/94	Ekström, et al.	204	299	11/10/92

5,387,329	2/7/95	Foos, et al.	204	415	4/9/93
5,401,376	3/28/95	Foos, et al.	204	415	3/11/94
5,401,963	3/28/95	Sittler	250	288	11/1/93
5,415,841	5/16/95	Dovich, et al.	422	68.1	8/18/94
5,421,980	6/6/95	Guttman	204	299	7/8/94
5,427,946	6/27/95	Kricka, et al.	435	291	1/21/94
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5,486,335	1/23/96	Wilding, et al.	422	55	4/24/95
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5,512,131	4/30/96	Kumar, et al.	156	655.1	10/4/93
5,512,451	4/30/96	Kricka	435	28	3/25/94
5,572,023	11/5/96	Caprioli	250	288	5/30/95
5,652,427	7/29/97	Whitehouse, et al.	250	288	5/14/96
5,877,495	3/2/99	Takada, et al.	250	288	8/7/95
6,005,245	12/21/99	Sakairi, et al.	250	281	8/29/97
6,060,705	5/9/00	Whitehouse, et al.	250	288	12/10/97
6,114,693	9/5/00	Hirabayashi, et al.	250	288	4/27/99
6,245,227	6/12/01	Moon, et al.	210	198.2	9/17/98

U.S. Published Patent Application Documents

<u>Patent App. Number</u>	<u>Publ. Number</u>	<u>Name</u>	<u>Filing Date</u>
09/745,629	2001-0001455	Davis, et al.	12/21/00
09/745,652	2001-0001460	Davis, et al.	12/21/00

09/745,779	2001-0001456	Davis, et al.	12/21/00
09/746,866	2001-0001474	Davis, et al.	12/21/00
09/747,080	2001-0001452	Davis, et al.	12/21/00

Foreign Patent Documents

<u>Document Number</u>	<u>Publ. Date</u>	<u>Country or Patent Office</u>	<u>Sub Class</u>	<u>Class</u>	<u>Trans- lation</u>
DE 43 18 407	12/1994	Germany	250	288	No
EP 637,998	7/1996	Europe	50	288	N/A
EP 639,223	7/1996	Europe	250	288	N/A
GB 2 260 282	4/1993	Great Britain	280	288	N/A
WO 92/03720	3/1992	PCT	250	288	N/A
WO 96/04547	2/1996	PCT	250	288	N/A
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Please credit any over payment or charge any additional fees to Deposit Account No. 23-3178 of the undersigned.

Dated this 28th day of February, 2002.

Respectfully submitted,



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Applicant:
Serial No.:
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November 7, 2000
INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND
LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

Att'y Docket No. 14917.1.6
Group: 1743



SUPPLEMENTAL
INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANTS

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U.S. Patent Documents

Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
EGT A1	3,538,744	11/10/760	Karasek	73	23.1	11/09/67
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Sheet 2 of 2/4

Applicant:

James E. Mooney et al

Serial No.:

09/707,653

09/702,955

Att'y Docket No. 14917.1.6

Filing Date:

November 7, 2000

Group: 1743

For:

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

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INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND
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James E. Moon, et al.

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INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND
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Applicant:

Serial No.:

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For:

James E. Moon, et al

09/707,653-09/1702,1955

November 7, 2000

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

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Date Considered:

MAY 22, 2002

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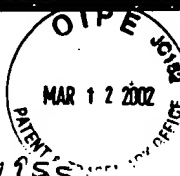
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While the filing of Information Disclosure Statements is voluntary, the procedure is governed by the guidelines of Section 609 of the Manual of Patent Examining Procedure and 37 C.F.R. §§ 1.97 and 1.98. To be considered a proper Information Disclosure Statement, Form PTO-1449 shall be accompanied by a copy of each listed patent or publication or other item of information and a translation of the pertinent portions of foreign documents (if an existing translation is readily available to the applicant), an explanation of relevance of each reference not in the English language, and should be submitted in a timely manner as set out in MPEP Sec. 609.

Examiners will consider all citations submitted in conformance with 37 C.F.R. § 1.98 and MPEP Sec. 609 and place their initials adjacent the citations in the spaces provided on this form. Examiners will also initial citations not in conformance with the guidelines which may have been considered. A reference may be considered by the Examiner for any reason whether or not the citation is in full conformance with the guidelines. A line will be drawn through a citation if it is not in conformance with the guidelines AND has not been considered. A copy of the submitted form, as reviewed by the Examiner, will be returned to the applicant with the next communication. The original of the form will be entered into the application file.

Each citation initialed by the Examiner will be printed on the issued patent in the same manner as references cited by the Examiner on Form PTO-892.

The reference designations "A1," "A2," etc. (referring to Applicant's reference 1, Applicant's reference 2, etc.) will be used by the Examiner in the same manner as Examiner's reference designations "A," "B," "C," etc. on Office Action Form PTO-1142.

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SUPPLEMENTAL INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

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Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
<u>EGT</u> A1	4,480,259	10/30/84	Kruger, et al.	346	140	07/30/82
<u>EGT</u> A2	4,489,259	12/18/84	White, et al.	318	696	04/29/82
<u>EGT</u> A3	4,490,728	12/25/84	Vaught, et al.	346	1.1	10/07/82
<u>EGT</u> A4	4,590,482	05/20/86	Hay, et al.	346	1.1	12/14/83
<u>EGT</u> A5	5,162,650	11/10/92	Bier	250	288	01/25/91
<u>EGT</u> A6	5,423,964	06/13/95	Smith, et al.	204	180	08/02/93
<u>EGT</u> A7	5,481,110	01/02/96	Krishnaswamy, et al.	250	288	10/07/94
<u>EGT</u> A8	5,501,883	03/26/96	Ishikawa, et al.	428	1	07/27/94
<u>EGT</u> A9	5,523,566	06/04/96	Fuerstenau, et al.	250	282	07/20/94
<u>EGT</u> A10	5,536,939	07/16/96	Freidhoff, et al.	250	281	10/07/94
<u>EGT</u> A11	5,541,408	07/30/96	Sittler	250	288	02/17/95
<u>EGT</u> A12	5,563,639	10/08/96	Cameron, et al.	347	34	10/30/94
<u>EGT</u> A13	5,608,217	03/04/97	Franzen, et al.	250	288	03/10/95
<u>EGT</u> A14	5,640,010	06/17/97	Twerenbold	250	281	05/11/95
<u>EGT</u> A15	5,644,131	07/01/97	Hansen	250	292	05/22/96
<u>EGT</u> A16	5,705,813	01/06/98	Apffel, et al.	250	288	11/01/95
<u>EGT</u> A17	5,716,825	02/10/98	Hancock, et al.	435	286.5	11/01/95
<u>EGT</u> A18	5,747,815	05/05/98	Young, et al.	250	423	07/24/96
<u>EGT</u> A19	5,501,893	03/26/96	Laermer, et al.	428	161	11/27/93
<u>EGT</u> A20	5,750,988	05/12/98	Apffel et al.	250	288	02/03/97

Examiner:

MAY 22 2002

Date Considered:

MAY 22 2002

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Form PTO-1449

Sheet 2 of 16

Applicant:

James E. Moon, et al.

Serial No.:

09/707,653 09/702,955

Att'y Docket No. 14917.1.6

Filing Date:

November 7, 2000

Group: 1743

For:

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND
LIQUID CHROMATOGRAPHY SYSTEM AND METHODU.S. Patent Documents

Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
EGT A21	6,032,876	03/07/00	Bertsche et al.	239	418	12/01/98
EGT A22	6,066,848	05/23/00	Kassel et al.	250	288	12/03/98

Foreign Patent Documents

Examiner Initial*	Document Number	Publ. Date	Country or Patent Office	Sub Class	Class	Trans- lation
EGT A23	EP259,796	01/03/96	Europe	250	288	N/A
EGT A24	EP 565,027	03/05/97	Europe	250	288	N/A
EGT A25	EP 588,952	09/01/99	Europe	250	288	N/A
EGT A26	EP 677,322	10/18/95	Europe	250	288	N/A
EGT A27	EP 692,713	01/17/96	Europe	250	288	N/A
EGT A28	EP 860,858	08/26/98	Europe	250	288	N/A
EGT A29	GB 2,287,356	09/13/95	Great Britain	250	288	N/A
EGT A30	WO 00/52455	09/08/00	PCT	250	288	N/A
EGT A31	PCT/US00/34999		PCT	250	288	N/A
EGT A32	PCT/US01/01785		PCT	250	288	N/A

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EGT A33 John H. Knox, "Theoretical Aspects of LC with Packed and Open Small-Bore Columns," Journal of Chromatographic Science, Vol. 18, September, 1980, pages 453-461.

EGT A34 James N. Alexander IV, "Development of a Nano-electrospray Mass Spectrometry Source"

Examiner: THEKORW

Date Considered:

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Form PTO-1449

Sheet 1 of 16

Applicant: James E. Moon, et al.

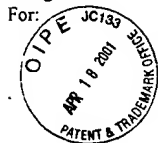
Serial No.: ~~09/707,653~~ 09/702,955

Att'y Docket No. 14917.1.6

Filing Date: November 7, 2000

Group: 1743

For: INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD



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EC A37 Matthias S. Wilm, Matthias Mann, "Electrospray and Taylor-Cone theory, Dole's beam of macromolecules at last?", International Journal of Mass Spectrometry and Ion Processes and Ion Processes, June, 1994, pages 167-180.

EC A38 David C. Gale and Richard D. Smith, "Small Volume and Low Flow-rate Electrospray Ionization Mass Spectrometry of Aqueous Samples," Rapid Communications in Mass Spectrometry, Vol. 7, September, 1993, pages 1017-1021.

EC A39 Richard B. Cole, "Electrospray Ionization Mass Spectrometry," John Wiley & Sons, Inc., 1997, pages 1-62.

References Cited by Applicants

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Examiner:

THEKOR

Date Considered:

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Sheet 4 of 16

Applicant:

James E. Moon, et al.

Serial No.:

097707,553 097702,955

Att'y Docket No. 14917.1.6

Filing Date:

November 7, 2000

Group: 1743

For:

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND
LIQUID CHROMATOGRAPHY SYSTEM AND METHOD



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Examiner:

THEPKUW

Date Considered:

MAY 22 2002

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Form PTO-1449

Applicant:

James E. Moon, et al.

Serial No.:

09/707,055 09/702,955

Filing Date:

November 7, 2000

For:

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

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Sheet 7 of 8

Att'y Docket No. 14917.1.6

Group: 1741

INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

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Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
EGT A1	4,842,701	06/27/89	Smith, et al.	204	180.1	04/06/87
EGT A2	5,182,366	01/26/93	Huebner, et al.	530	334	05/15/90
EGT A3	5,641,400	06/24/97	Kaltenbach, et al.	210	198.2	10/23/95
EGT A4	5,872,010	02/16/99	Karger, et al.	436	173	07/03/96
EGT A5	5,917,184	06/29/99	Carson, et al.	250	288	02/07/97
EGT A6	5,969,353	10/19/99	Hsieh	250	288	01/22/98
EGT A7	5,993,633	11/30/99	Smith, et al.	204	601	07/31/97
EGT A8	5,994,696	11/30/99	Tai, et al.	250	288	01/27/98

Other Documents

(including author (if listed), title, relevant pages, date of publication including at least month and year).

Examiner

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EGT A9	Amish Desai, Yu-Chong Tai, Michael T. Davis, and Terry D. Lee, "A MEMS Electrospray Nozzle for Mass Spectroscopy," 1997 International Conference in Solid-State Sensors and Actuators, Chicago, June 16-19, 1997, p. 927-930
EGT A10	David P. H. Smith, "The Electrohydrodynamic Atomization of Liquids," IEEE Transactions on Industry Applications, Vol. IA-22, No. 3, p. 527-535, May-June, 1986
EGT A11	Stephen C. Jacobson, Roland Hergenroder, Lance B. Koutny, and J. Michael Ramsey, "High-Speed Separations on a Microchip," Anal. Chem., April 1, 1994, 66, 1114-1118
EGT A12	Stephen C. Jacobson, Roland Hergenroder, Lance B. Koutny, and J. Michael Ramsey, "Open Channel Electrochromatography on a Microchip," Anal. Chem. 1994, 66, 2369-2373
EGT A13	D. Jed Harrison, Karl Fluri, Kurt Seiler, Zhonghui Fan, Carlo S. Effenhauser, and Andreas Manz, "Micromachining a Miniaturized Capillary Electrophoresis-Based Chemical Analysis System on a Chip," Science, Vol. 261, August 1993, 895-897

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THEE KURJ

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Form PTO-1449

Applicant:

Serial No.:

Filing Date:

For:

09/702,955

James E. Moon, et al.

~~09/707,653~~

November 7, 2000

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND
LIQUID CHROMATOGRAPHY SYSTEM AND METHOD



Sheet 2 of 3

Att'y Docket No. 14917.1.6

Group: 1741

EGT A14

R.S. Ramsey and J.M. Ramsey, "Generating Electrospray from Microchip Devices Using Electroosmotic Pumping," *Analytical Chemistry*, Vol. 69, No. 6, March 15, 1997, p. 1174-1178

EGT A15

Matthias Wilm and Matthias Mann, "Analytical Properties of the Nanoelectrospray Ion Source," *Analytical Chemistry*, Vol. 68, No. 1, January 1, 1996, p. 1-8

EGT A16

Qifeng Xue, Frantisek Foret, Yuriy M. Dunaevskiy, Paul M. Zavacky, Nicol E. McGruer, and Barry L. Karger, "Multichannel Microchip Electrospray Mass Spectrometry," *Analytical Chemistry*, Vol. 69, No. 3, February 1, 1997, p. 426-430

EGT A17

Malcolm Dole, L.L. Mack, R.L. Hixes, R.C. Mobley, L.D. Ferguson, and M.B. Alice, "Molecular Beams of Macroions," *The Journal of Chemical Physics*, Volume 49, Number 5, September 1, 1968, p. 2240-2249

EGT A18

Masanichi Yamashita and John B. Fenn, *Journal of Chemical Physics*, Volume 88, 1984, p. 4451-4459

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THEER KORN

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Form PTO-1449

Applicant: James E. Moon, et al.

Serial No.: 09/702,955

Filing Date: November 7, 2000

For:

INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

Sheet 4 of 7

Att'y Docket No. 14917.1.6

Group: 1741

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SUPPLEMENTAL INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANTU.S. Patent Documents

Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
EGT A1	6,245,227	06/12/2001	Moon, et al.	210	198.2	09/17/1998

References Cited by Applicants

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Examiner:

THERKUN

Date Considered:

MAY 22 2002

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Form PTO-1449

Sheet 16 of 16

Applicant: James E. Moon, et al.

Serial No.: 09/707,653 09/702,955

Att'y Docket No. 14917:1.6

Filing Date: November 7, 2000

Group: 1741

For: INTEGRATED MONOLITHIC MICROFABRICATED ELECTROSPRAY AND LIQUID CHROMATOGRAPHY SYSTEM AND METHOD

SUPPLEMENTAL INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANTU.S. Patent Documents

Examiner Initial*	Patent Number	Issue Date	Name	Class	Sub Class	Filing Date
EGT A1	6,110,343	08/29/2000	Ramsey, et al.	204	601	10/04/96

References Cited by Applicants

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Examiner: THEKORW Date Considered: MAY 22 2002

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